



## Can You DTR?

So far in this course we have looked at a variety of functions and how they describe the relationship between two changing quantities. When we want to make predictions based on some data, it is helpful to have a function *model*. But how do we choose which one?

1. For each of the 8 scenarios given, determine what type of function best defines the relationship. Choose from the list below. Note that some may not be used and some may be used more than once.

Constant  
Linear  
Quadratic  
Piecewise (specify what each “piece” would be)  
Rational  
Cubic  
Quartic  
Higher degree polynomial ( $n > 4$ )

2. Your teacher will assign you two scenarios to explore in greater depth. For each scenario, answer the following questions:

Scenario 1: \_\_\_\_\_

- a. What assumptions are being made in this scenario? Are these assumptions reasonable?
- b. What other information might be helpful to know?
- c. On which interval(s) of the domain would your function model work well? Explain.
- d. What are the limitations of your model?

Scenario 2: \_\_\_\_\_

- a. What assumptions are being made in this scenario? Are these assumptions reasonable?
- b. What other information might be helpful to know?
- c. On which interval(s) of the domain would your function model work well? Explain.
- d. What are the limitations of your model?

## Lesson 3.4 – Selecting a Function Model

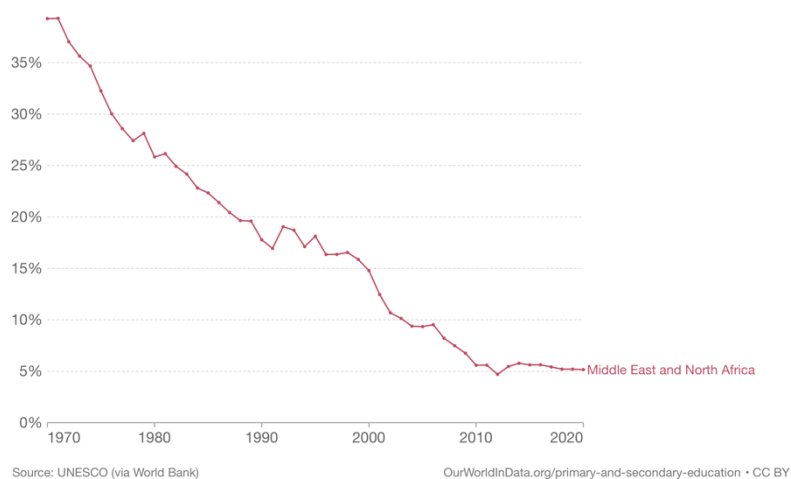
QuickNotes

### Check Your Understanding

1. The graph shows the percentage of students in the Middle East and North Africa who are NOT enrolled in primary or secondary school.

- a. Describe how the percentage of students who are not enrolled in school is changing over this time period.

- b. Let  $N(t)$  represent the percentage of children not enrolled in school  $t$  years after 1970. What type of function could be used to model  $N$ ? Explain.



- c. Do you think the model you chose in part b could be used to predict the percentage of students not enrolled in school in 2030? Why or why not?
- d. Give any domain or range restrictions that should be used for your model of  $N$ .